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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MARK LEVINE,  
Joseph G. O'Connor, Frank DiTaranto,  
Crayton Gregory Toney, and Shuiyuan Luo

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Appeal 2010-006148  
Application 10/699,997  
Technology Center 1700

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Before PETER F. KRATZ, CATHERINE Q. TIMM, and  
MARK NAGUMO, *Administrative Patent Judges*.

NAGUMO, *Administrative Patent Judge*.

DECISION ON APPEAL

**A. Introduction<sup>1</sup>**

Mark Levine, Joseph G. O'Connor, Frank DiTaranto, Crayton Gregory Toney, and Shuiyuan Luo ("Levine") timely appeal under 35 U.S.C. § 134(a) from the final rejection<sup>2</sup> of claims 1-4, 7-14, 16, 17, 19, 20, 22-24, 27-34, and 36-40.<sup>3</sup> We have jurisdiction. 35 U.S.C. § 6. We AFFIRM.

The subject matter on appeal relates to polymeric monofilaments having C-shaped grooves that contain conductive polymeric material. The monofilaments are said to be useful for making industrial fabrics, particularly belts used to make nonwoven textiles via airlaid, meltblown, or spun bonding processes. The grooves are said to secure mechanically the conductive polymer in the filament, so that as the filament wears, the filament retains its conductivity.

Claim 24 is representative and reads:

24. An industrial fabric polymeric filament said polymeric filament having
- one or more C-shaped grooves
- with a mouth having a width less than the width of a central portion of the groove, wherein

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<sup>1</sup> Application 10/699,997, *Durable Highly Conductive Synthetic Fabric Construction*, filed 3 November 2003. The specification is referred to as the "997 Specification," and is cited as "Spec." The real party in interest is listed as Albany International Corp. (Fifth Amended Appeal Brief, filed 20 October 2009 ("Br."), 2.)

<sup>2</sup> Office action mailed 12 June 2008.

<sup>3</sup> Copending claims 5, 6, 25, and 26 have been withdrawn from consideration and are not before us.

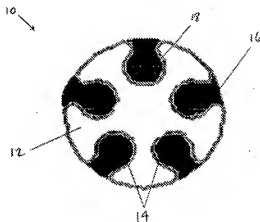
said C-shaped grooves are substantially filled with electrically conductive polymer material mechanically locked in place and

wherein the one or more C-shaped grooves allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity.

(Claims App., Br. 28; indentation and paragraphing added.)

Independent claim 1 is drawn to an “industrial fabric used in making nonwoven textiles . . . comprising a conductive engineered fabric comprising a plurality of polymeric filaments” essentially as recited in claim 24.

A cross section of a filament covered by claim 24 is shown in Figure 1, which is reproduced below:



{Fig. 1 shows a cross section of a filament with inert core 12, C-shaped grooves 18, and conductive polymeric coating 14.}

The Examiner maintains the following grounds of rejection:<sup>4</sup>

- A. Claims 1-4, 7, 8, 11-14, 16, 17, 19, 20, 22, 24, 27, 28, 31-34, 36, 37, 39 and 40 stand rejected under 35 U.S.C. § 103(a) in view of the combined teachings of Takagi<sup>5</sup> and Rohrbach.<sup>6</sup>

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<sup>4</sup> Examiner's Answer mailed 24 November 2009 (“Ans.”).

- B. Claims 9, 10, 23, 29, 30, and 38 stand rejected under 35 U.S.C. § 103(a) in view of the combined teachings of Takagi, Rohrbach and Kuhn.<sup>7</sup>

## **B. Discussion**

Findings of fact throughout this Opinion are supported by a preponderance of the evidence of record.

Levine argues, *inter alia*, that Takagi and Rohrbach “fail to qualify as analogous art with each other, much less with the presently claimed invention.” (Br. 21, last para.) According to Levine, Takagi relates to antistatic dustproof garment fabrics made from fibers having a linear density of 200 denier or less. (*Id.* at 14, ll. 1-2; 21, l. 1.) Rohrbach, in Levine’s view, relates to a filtering fabric made from filaments having T-shaped lobes that trap particles such as powdered activated carbon. (*Id.* at 17.) The improvement taught by Rohrbach avoids the use of adhesives. (*Id.*) Levine argues that a person having ordinary skill in the art would not look from either reference to the other to solve any problem of either. (*Id.*)

The Examiner finds that Takagi describes a conductive fabric comprised of polymeric filaments having C-shaped grooves, into which is

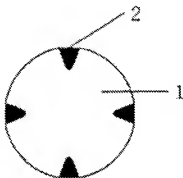
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<sup>5</sup> Susumu Takagi and Yutaka Matsui, *Fabrics and Rust Proof Clothes Excellent in Conductivity and Antistatic Property*, U.S. Patent 6,432,850 B1 (13 August 2002).

<sup>6</sup> Ronald P. Rohrbach et al., *Hollow Fibers Impregnated with Solid Particles*, U.S. Patent 5,744,236 (1998).

<sup>7</sup> Hans H. Kuhn and William C. Kimbrell, Jr., *Electrically Conductive Textile Materials and Method for Making Same*, U.S. Patent 4,803,096 (1989).

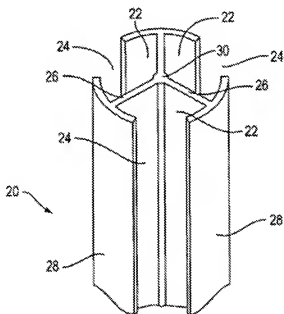
incorporated an electrically conductive polymeric material “as a coating that substantially fills the C-shaped grooves.” (Ans. 4, citing Takagi col. 1, ll. 6-10; col. 3, ll. 53-64, col. 4, lines 8-21, and Figure 1.) Takagi Figure 1 is reproduced in relevant part below:



{Fig. 1 shows a filament 1 with an electrically conductive polymer layer 2}

Review of Takagi reveals that the yarns described by Takagi are comprised of filaments suitable for clothing (Takagi col. 3, ll. 65-67) covered by conductive fibers obtained by bicomponent spinning a base polymer (1) as fiber substrate with a “conductive polymer having fine particles of a conductive material such as carbon, . . . dispersed in a matrix polymer” (2) (*Id.* at col. 4, ll. 11-14 and ll. 20-21.) According to Takagi, “the conductive yarn used as the warp and weft is structured by covering synthetic filament yarn as the core with conductive bicomponent fibers.” (*Id.* at col. 3, ll. 53-56.) Takagi teaches further that, “[i]nsofar as a part of (the conductive polymer containing) the conductive material in the bicomponent fiber is exposed to the surface, *the sectional shape are not particularly limited.*” (*Id.* at col. 4, ll. 16-19; *emphasis added.*) Takagi then describes the sectional shapes of fibers illustrated in Figure 1.

The Examiner finds that the grooves taught by Takagi are not disclosed as being C-shaped with smaller mouths than central portions as required by the appealed claims. (Ans. 4, 2d para.) However, the Examiner finds that Rohrbach describes multi-lobed polymer fibers having such C-shaped grooves. (*Id.*, citing Rohrbach col. 1, ll. 46-63, col. 3, ll. 20-27, col. 4, ll. 5-9, and Figure 3.) Rohrbach Figure 3 is shown below.



{Rohrbach Fig. 3 shows a cross section of a fiber}

Review of Rohrbach discloses that Rohrbach describes fibers having longitudinal extending internal cavities that have openings extending to the outer surface of the fibers. (Rohrbach col. 1, ll. 50-52.) The openings are said to mechanically entrap solid particles, such as activated carbon powders, without using an adhesive. (*Id.* at ll. 46-49.) The fibers are said to be useful as filter elements. (*Id.* at l. 30.)

The Examiner argues that that the increased durability arising from the entrapment would have provided the motivation to modify Takagi's

filaments by using filaments having C-shaped grooves having a mouth width less than the central portion of the groove, such as those taught by Rohrbach. (Ans. 4, 2d para.) The Examiner argues further that this would have been a substitution of one equivalent structure for another, and therefore would have been obvious to the artisan. (Ans. 5, 1st para.)

The majority of Levine's arguments rest on the term "industrial fabric," which is found in the preambles of claims 1 and 24.<sup>8</sup> Levine urges that the Evidence Appendices show that the term "industrial fabric" refers to fabrics from fibers having a much greater diameter (0.50 mm or more) and a much higher denier (2444 or higher) than the filaments used by Takagi, which have a maximum linear density of 200 denier or less. (Br. 13-14.) We find these arguments unpersuasive, as Levine has not directed our attention to credible evidence of record that the term "industrial fabric" is sufficiently well defined as a term of art that the artisan would have understood the claims, which we must read broadly and consistently with the supporting specification, as excluding the lighter weight filaments and fabrics described by Takagi. At best, the evidence submitted by Levine in the Evidence Appendices is consistent with the argument presented. That evidence does not, however, stand as proof of how the term is used and understood by persons having ordinary skill in the art. Absent such proof,

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<sup>8</sup> Although Levine presents arguments directed at the term "industrial belt," which was present in the claims on appeal (the Examiner did not admit an amendment filed after the final rejection until after the Fifth Amended Brief was filed), we accept those arguments as though directed to the term "industrial fabric," particularly since neither the Examiner nor Levine appear to make substantively distinct arguments with respect to either term.

the term appears to be no more than descriptive of various intended uses. Various fabrics can be used for a wide variety of “industrial uses,” not all of which are in harsh environments, and not all of which subject the materials to extreme mechanical stress. No limitations of harsh operating conditions are express in representative claims 24 or 1. Moreover, Levine has not directed our attention to any definitions in the 997 Specification that limit any of the terms used in claim 24 to the conditions of use Levine now seeks to impose. Nor is there evidence of record that the terms “airlaid, meltblown, or spunbonding processes” recited in the preamble of claim 1 are limited to harsh operating conditions that would exclude the use of less sturdy materials than those urged by Levine.

The burden of presenting claims lies with Levine, who seeks the right to exclude others from the claimed area of technology. As our reviewing court has stated,

We decline to attempt to harmonize the applicants’ interpretation with the application and prior art. Such an approach puts the burden in the wrong place. It is the applicants’ burden to precisely define the invention, not the PTO’s. *See* 35 U.S.C. § 112 ¶ 2 (“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”).

*In re Morris*, 127 F.3d 1048, 1056 (Fed. Cir. 1997). We are therefore not persuaded of harmful error in the Examiner’s refusal to read the additional limitations urged by Levine into the claims.

Levine argues further that when the tops or caps [28] of the T-shaped lobes 26 of the filaments described in Rohrbach Fig. 3 wear away, “the

keystone type mechanical entrapment effect within the cavities would fail, causing the powder particles to spill or fall-out of the cavities.” (Br. 17, last para.) Therefore, in Levine’s view, Rohrbach “teaches away from a monofilament that allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity.” (*Id.* at 18, 1st para.)

The claims require that the C-shaped grooves “allow for continued exposure of the conductive polymer to the filament surface as the monofilament wears,” so that the filament retains its conductivity. The claims do not specify the extent of wear that must be accommodated. As the Examiner notes (Ans. 12), slight wear that does not remove the caps would not significantly diminish the protective function of the small-mouthed C-shaped groove. Moreover, Levine appears to be focusing on the disclosure of Rohrbach alone, in which the C-shaped grooves are filled with a powder, not on the Examiner’s proposed rejection, in which the C-shaped grooves contain the bicomponent-spun conductive polymer taught by Takagi (Takagi, col. 4, ll. 8-15). Such piecemeal criticisms that address features of single references rather than the proposed combination of teachings from all of the references relied on are generally not persuasive of harmful error. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (“the test [for obviousness] is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”) (Citations omitted).

Finally, Levine appears to complain about the propriety of the Examiner’s actions during the lengthy proceedings after the notice of appeal and the filing of the initial appeal brief. More particularly, Levine urges that

the Examiner's statement that due to the entered amendment, "the appeal brief is not commensurate in scope with the current claims" was not adequate notice that a "*fundamentally new interpretation* based on an amendment entered only after the filing of Appellants['] initial Appeal Brief." (Reply 13-14.) Such matters are beyond our jurisdiction, as relief from perceived procedural flaws during examination lies within the jurisdiction of the Director. 37 C.F.R. §1.181. We note in passing, however, that Levine's evidence is no more commensurate in scope with the term "industrial belt" than it is with the term "industrial fabric."

Levine does not present substantively distinct arguments regarding the Examiner's second basis of rejection. (Br. 22.) We also note that Levine has not advanced arguments based on secondary considerations such as unexpected results.

In conclusion, we are not persuaded by Levine's arguments of harmful error in the Examiner's rejections.

### **C. Order**

We AFFIRM the rejection of claims 1-4, 7, 8, 11-14, 16, 17, 19, 20, 22, 24, 27, 28, 31-34, 36, 37, 39 and 40 under 35 U.S.C. § 103(a) in view of the combined teachings of Takagi and Rohrbach.

We AFFIRM the rejection of claims 9, 10, 23, 29, 30, and 38 stand rejected under 35 U.S.C. § 103(a) in view of the combined teachings of Takagi, Rohrbach and Kuhn.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

kmm